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TEST REPORT OF PHYSICAL PROPERTIES OF CEMENT - 53 Grade

Lab ID	:	**CP-2019-04-11-32** **Date: 25-02-2019**
Customer	:	Assistant Executive Engineer, Yelahanaka New Town Sub Division, BBMP, Bangalore.
Address	:	Yelahanaka New Town Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RO Plant at BBMP Helppoint in Ward no 04
Agency	:	Sri.N.Rajesh(K Flow RO), No:541, 9th Main, 2nd Block, 41st Cross, Behind Vijayabank, Rajajinagara, Bangalore-10.
Customer's Reference	:	EE(YNK D)E-PMT-02/W.O/116/2018-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	22-02-2019
Sample Type	:	Birla Super 53grade
Reference to BIS codes	:	IS 12269 : 2013, 53 Grade Ordinary Portland cement Specification , IS 4031 (Part 1,2 3,4,5, 6,11):1988 IS 4031 Part 1 DETERMINATION OF FINENESS BY DRY SIEVING, Clause 4.4 IS 4031 Part 2, Determination of Fineness by Blaine Air Permeability Method, Clause 5 IS 4031 Part 3, Determination of Soundness, Clause 5,Clause 6 IS 4031 Part 4, Determination of Consistency of Standard Cement Paste, Clause 5 IS 4031 Part 5, Determination of Initial & Final Setting Time, Clause 5 IS 4031 Part 11,DETERMINATION OF DENSITY , Clause 6
Date of test	:	23-02-2019
Environmental Conditions during test	:	Temperature: 26°C Humidity: 72%

Sl.No.	Physical properties	Results	Requirement as per IS 12269: 2013
1	Fineness by dry sieving (%)	1.08	_
2	Finess by Air permeablity method (m^2/kg,Min)	298.5	225m^2/kg, Min
3	Density (gm/cc)	3.14	_
4	Standard Consistency (%)	29.5%	Not specified
5	Initial Setting time	145 minutes	Not less than 30 minutes
6	Final Setting time	275 minutes	Not more than 600 minutes
7	Soundness (Le Chatelier's Method)	1.5mm	Not more than 10 mm

Note:

The results pertain to the samples received and tested.

All information furnished by Customer/Representative

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R KARTHIK RECHAN
Authorized Signatory
Quality Manager

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TEST REPORT ON PHYSICAL REQUIREMENTS OF SOLID CONCRETE BLOCKS

Lab ID	:	**CP-2019-04-11-32** **Date: 01-03-2019**
Customer	:	Assistant Executive Engineer, Yelahanaka New Town Sub Division, BBMP, Bangalore.
Address	:	Yelahanaka New Town Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RO Plant at BBMP Helppoint in Ward no 04
Agency	:	Sri.N.Rajesh(K Flow RO), No:541, 9th Main, 2nd Block, 41st Cross, Behind Vijayabank, Rajajinagara, Bangalore-10.
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/116/2018-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	26-02-2019
Sample Type/Size	:	Solid concrete blocks size (400X200X200)mm
Reference to BIS codes	:	IS : 2185 (Part 1) : 2005(RA 2010) Concrete Masonry Specification Part 1:Hollow and Solid Concrete Blocks (Dimensions -Annex-B, Clause 9.2 and 10 , Block density Annex -C Clause 9.3 and10, Compressive strength Annex -D Clause 9.4 and 10, Water absorption Annex -E Clause 9.5 and 10)
Date of test	:	26-02-2019

BLOCK DENSITY:

Sl. No.	Measurement of overall Dimensions of Individual Blocks			Overall Volume of the Block in Cubic Centimetres	Weight of Oven Dried Block in Kilograms to the nearest 10 Gram	Block Density in Kg/cum*10^6	Avg.Block Density in (Kg/cum)	As per IS 2185(Part 1) :2005 (RA 2010)
	Length	Breadth	Height					
	mm	mm	mm	(Cm^3)	Kg	Kg/m^3	Kg/m^3	
1	402	203	203	16566	38.750	2339.1	2343.6	Not less than 1800Kg/m^3
2	401	201	201	16201	37.630	2322.7		
3	402	202	202	16403	38.860	2369.0		

WATER ABSORPTION:

Sl. No.	Wet weight after water absorption	Dry weight (Oven dry)	Water Absorption	Avg.Water Absorption	As per IS 2185(Part 1):2005 (RA 2010)
	kg	kg	%	%	
1	26.130	24.820	5.28	5.27	Shall not be more than 10% by mass
2	26.120	24.800	5.32		
3	25.820	24.540	5.22		

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TEST RESULTS OF STEEL

Date: 05-03-2019

Lab ID	:	CP-2019-04-11-32
Customer	:	Assistant Executive Engineer, Yelahanaka New Town Sub Division, BBMP, Bangalore.
Address	:	Yelahanaka New Town Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RO Plant at BBMP Helppoint in Ward no 04
Agency	:	Sri.N.Rajesh(K Flow RO), No:541, 9th Main, 2nd Block, 41st Cross, Behind Vijayabank, Rajajinagara, Bangalore-10.
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/116/2018-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	02-03-2019
Sample Type	:	Sunvik
Reference to BIS codes	:	IS 1786-2008, IS:1608-2005(RA 2011), IS 1599-2012.
Date of test:	:	02-03-2019

SLNo	Identification of sample	Grade of the sample	Diameter of the steel bar	Weight of the sample	Yield stress	Tensile strength	Elongation	Bend test	Rebend test
			(mm)	(kg/m)	(N/mm2)	(N/mm2)	(%)		
1	Sunvik	Fe500	8	0.393	518	652	20.0%	Satisfactory	Satisfactory
2	Sunvik	Fe500	10	0.616	525	672	20.0%	Satisfactory	Satisfactory
3	Sunvik	Fe500	12	0.883	544	668	20.0%	Satisfactory	Satisfactory

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Quality Manager

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2019-04-11-32 **Date: 13/03/2019**

Customer : Assistant Executive Engineer, Yelahanaka New Town Sub Division, BBMP, Bangalore.

Address : Yelahanaka New Town Sub Division, BBMP, Bangalore.

Project Name : Construction of RO Plant at BBMP Helppoint in Ward no 04

Agency : Sri.N.Rajesh(K Flow RO), No:541, 9th Main, 2nd Block, 41st Cross, Behind Vijayabank, Rajajinagara, Bangalore-10.

Customer's Reference : EE(YNK.D)E-PMT-02/W.O/116/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 08-03-2019

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 7 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 13/03/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Concrete	M20	06/03/2019	13/03/2019	149.72 X 150.61 X 149.86	22549	8.106	427.4	19.0	18.8
2	Drain Concrete	M20	06/03/2019	13/03/2019	150.12 X 151.79 X 150.61	22786	8.458	432.6	19.0	
3	Drain Concrete	M20	06/03/2019	13/03/2019	150.09 X 150.20 X 150.64	22544	8.964	419.0	18.6	

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TEST REPORT OF CEMENT CONCRETE CUBES

Lab ID : CP-2019-04-11-32 **Date: 03/04/2019**

Customer : Assistant Executive Engineer, Yelahanaka New Town Sub Division, BBMP, Bangalore.

Address : Yelahanaka New Town Sub Division, BBMP, Bangalore.

Project Name : Construction of RO Plant at BBMP Helppoint in Ward no 04

Agency : Sri.N.Rajesh(K Flow RO), No:541, 9th Main, 2nd Block, 41st Cross, Behind Vijayabank, Rajajinagara, Bangalore-10.

Customer's Reference : EE(YNK.D)E-PMT-02/W.O/116/2018-19

Source of Sample : Sample supplied by Agency

Sample Condition : Satisfactory

Date of Receipt : 08-03-2019

Customer ID : Drain Concrete

Sample Type /Size : 150X150X150 mm

Sample grade/Age : M20 / 28 Days Compressive Strength

Reference to BIS codes : IS: 516 - 1959 Methods of Tests for Strength of Concrete Cl.5

Date of test : 03/04/2019

Sl. No.	Identification Mark	Grade of concrete	Date of Casting	Date of Testing	Dimension of the Specimen (mm)	Cross sectional area (Sq.mm)	Weight of the sample (kg)	Failure Load (KN)	Compressive strength (N/mm^2)	Average Compressive Strength (N/mm^2)
1	Drain Concrete	M20	06/03/2019	03/04/2019	149.07 X 151.26 X 151.86	22548	8.779	535.4	23.7	23.3
2	Drain Concrete	M20	06/03/2019	03/04/2019	149.36 X 150.61 X 151.43	22494	8.827	498.6	22.2	
3	Drain Concrete	M20	06/03/2019	03/04/2019	151.12 X 150.48 X 150.35	22739	8.782	544.8	24.0	

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	**CP-2019-04-11-32**	**Date: 25-02-2019**
Customer	:	Assistant Executive Engineer, Yelahanaka New Town Sub Division, BBMP, Bangalore.	
Address	:	Yelahanaka New Town Sub Division, BBMP, Bangalore.	
Project Name	:	Construction of RO Plant at BBMP Helppoint in Ward no 04	
Agency	:	Sri.N.Rajesh(K Flow RO), No:541, 9th Main, 2nd Block, 41st Cross, Behind Vijayabank, Rajajinagara, Bangalore-10.	
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/116/2018-19	
Source of Sample	:	Sample supplied by Agency	
Sample condition	:	Satisfactory	
Date of Receipt	:	22-02-2019	
Sample Type	:	40mm down size coarse aggregate	
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties	
Date of test	:	22-02-2019	

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 40MM DOWN COARSE AGGREGATE:

Total weight taken : 15000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	80 mm	0	0	0.0	100	100
2	40 mm	189	189	1.3	98.7	90-100
3	20 mm	7284	7473	49.8	50.2	30-70
4	10 mm	4089	11562	77.1	22.9	10-35
5	4.75 mm	3001	14563	97.1	2.9	0-5
6	Pan	437	15000	100.0	0	---

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TEST REPORT ON COARSE AGGREGATES

Lab ID	:	CP-2019-04-11-32 **Date: 25-02-2019**
Customer	:	Assistant Executive Engineer, Yelahanaka New Town Sub Division, BBMP, Bangalore.
Address	:	Yelahanaka New Town Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RO Plant at BBMP Helppoint in Ward no 04
Agency	:	Sri.N.Rajesh(K Flow RO), No:541, 9th Main, 2nd Block, 41st Cross, Behind Vijayabank, Rajajinagara, Bangalore-10.
Customer Reference	:	EE(YNK.D)E-PMT-02/W.O/116/2018-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	22-02-2019
Sample Type/ Size	:	20mm down size coarse aggregate
Reference to BIS codes	:	IS: 383:2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1,3,4) RA2011 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption IS 2386 Part 4: Mechanical Properties
Date of test	:	22-02-2019

SIEVE ANALYSIS (PARTICLE SIZE DISTRIBUTION) OF 20MM DOWN COARSE AGGREGATE:

Total weight taken : 5000 grams

Sample No.	Sieve No.	Weight Retained in gms	Cumulative Weight Retained in gms	% Cumulative Weight Retained	% Passing	Required as per IS 383:2016
1	40 mm	0	0	0	100	100
2	20 mm	199	199	4.0	96.0	90-100
3	10 mm	3050	3249	65.0	35.0	25-55
4	4.75 mm	1502	4751	95.0	5.0	0-10
5	Pan	249	5000	100	0	–

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TEST REPORT OF FINE AGGREGATE

Lab ID	:	CP-2019-04-11-32 **Date: 25-02-2019**
Customer	:	Assistant Executive Engineer, Yelahanaka New Town Sub Division, BBMP, Bangalore.
Address	:	Yelahanaka New Town Sub Division, BBMP, Bangalore.
Project Name	:	Construction of RO Plant at BBMP Helppoint in Ward no 04
Agency	:	Sri.N.Rajesh(K Flow RO), No:541, 9th Main, 2nd Block, 41st Cross, Behind Vijayabank, Rajajinagara, Bangalore-10.
Customer's Reference	:	EE(YNK.D)E-PMT-02/W.O/116/2018-19
Source of Sample	:	Sample supplied by Agency
Sample Condition	:	Satisfactory
Date of Receipt	:	22-02-2019
Sample Type	:	Fine Aggregate
Reference to BIS codes	:	IS 383 : 2016 (Specification for Coarse and fine Aggregates) IS: 2386 :1963(Part - 1, 3) RA2012 IS 2386 Part 1: Particle Size and Shape IS 2386 Part 3: Specific gravity, Density, Voids,Water Absorption
Date of test	:	22-02-2019
Total weight taken	:	1000 grams

Sl.no	Sieve Size	Weight Retained (gms)	Cumulative Weight Retained (gms)	% Cumulative Weight Retained	% Passing	Requirement as per IS 383:2016			
						Grading Zone I	Grading Zone II	Grading Zone III	Grading Zone IV
1	10 mm	0	0	0.0	100.0	100	100	100	100
2	4.75 mm	25	25	2.5	97.5	90-100	90-100	90-100	95-100
3	2.36 mm	53	78	7.8	92.2	60-95	75-100	85-100	95-100
4	1.18 mm	235	313	31.3	68.7	30-70	55-90	75-100	90-100
5	600 micron	203	516	51.6	48.4	15-34	35-59	60-79	80-100
6	300 micron	205	721	72.1	27.9	5-20	8-30	12-40	15-50
7	150 micron	194	915	91.5	8.5	0-10	0-10	0-10	0-15
8	Pan	85	1000	100.0	0.0	---	---	---	---

Result :The tested Sample Conforms to Grading Zone II

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TEST REPORT OF FINE AGGREGATE

Lab ID : CP-2019-04-11-32 Date: 25-02-2019

PHYSICAL PROPERTIES

Sl.no	Tests	Result	Requirements as per IS 383:2016
1	Water Absorption(%)	1.58	–
2	Specific Gravity	2.54	–
3	Material finer than 75 micron(%)	6.3	Uncrushed fine Aggregate Max 3%, Crushed Fine aggregate Max 15%, Mixed Fine aggregate Max 12%, Manufactured Fine aggregate Max 10%

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